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EPIDEMICS.

Remarks on the Etiology and Character of Epidemics. By J. A. ALLEN, M.D., of Middlebury, Vt.

Communicated for the Boston Medical and Surgical Journal.

THOSE diseases which have some strong resemblance in their general characters, and attack many individuals in a large extent of country at about the same time, are commonly called *epidemics*. If all, or about all the inhabitants of a country be similarly attacked, at or near the same time, with a particular complaint, it is more properly called a *pandemic*. When any particular section of a country is liable to produce diseases of a similarity of character in many individuals, they are said to be *endemic*; and a complaint which is confined to any particular class of persons, is said to be endemic to that class of persons. Thus, the scurvy is said to be endemic to sea-faring men; the goitre, connected with that peculiar intellectual imbecility which characterizes the *Cretan*, is endemic among the Alps; and agues, or intermittent and remittent fevers, are endemic to low, marshy countries—as Lake Champlain valley, in Vermont, where these complaints are endemial.

There is a similarity of character in the exciting or operative influence of endemics and epidemics—they have a tendency to monopolize, or to convert most other diseases which occur during their prevalence, within their sphere of action, into those complaints of their own kind. In malarious districts, it is obvious, that most febrile diseases of a few days' continuance are apt to ape the endemic of those districts. Hence fevers, for instance, on Lake Champlain valley, are, in general, more paroxysmal than those of the same nominal character on Connecticut river valley. The malaria of this district seems, in a measure, to influence febrile complaints, although they do not assume the true character of agues or remittents. The same disparity may probably be observed between any other malarious and non-malarious districts. An epidemic influence is, in some measure, analogous, but more powerful, and prevails to a greater extent. During the prevalence of an epidemic, most other diseases apparently disappear, or become converted into the prevailing malady. In epidemic periods this is generally the fact, whether the number attacked be more or less. At most of the places where the cholera has prevailed, this law of epidemics has been strikingly evinced.

In some places, as at Petersburg, the deaths, although not augmented beyond the ordinary number in other years, at the same season, have almost all been of the *spasmodic cholera*. The same was observed during the prevalence of the yellow fever in this country; and also of the late spotted fever, or sinking typhus, when they occurred epidemically; and Sydenham gives us to understand that the same was true of all other diseases which he had witnessed, when they happened as epidemics.

The etiology of epidemic, as well as endemic diseases, constitutes an interesting subject of inquiry. In respect to the cause of the latter, especially such endemics as agues and remittents, it is generally admitted that malaria, or an evolution from the earth of a certain deleterious something, is the cause of these maladies; but in respect to the former, it is a desideratum which the sagacity of the Coan sage could not certainly determine, nor have subsequent observers been much more fortunate. In the course of their investigations, however, many facts have been observed, from which it may be yet in human power to establish some useful and important conclusions. Hippocrates, the father of medicine, attributes epidemic pestilence to a *divine something* in the air; and Sydenham, after a long life spent in useful observations, came to the conclusion that epidemics 'originate from some occult and inexplicable changes wrought in the bowels of the earth itself, by which the atmosphere is contaminated with certain effluvia, which predispose the bodies of men to one or other form of disease.' This state of the air has appropriately been called an epidemic constitution of the atmosphere. More recently (1800), Dr. Webster, the American Lexicographer, has, with much labor and ingenuity, collected an immense number of facts to show the coincidence between the appearance of *comets* and meteors, the occurrence of earthquakes, the eruptions of volcanoes, the conjunction of certain planets, &c. 'All the comets,' affirms Dr. W., 'which have approached this earth, especially those which have passed very near, have been preceded, attended, or followed, by most extraordinary effects: as great heat and drought in summer, and *severe cold in winter*; deluging rains, violent tempests, and unusual tides.' Dr. W. quotes Aristotle, Pliny, Seneca, and others among the ancients, to prove that great commotions in the physical world are the general concomitants of the appearance of comets. Dr. W. supposes the action within the bowels of the earth may proceed for years, and manifest itself by means of insensible vapor, or miasm, or electric discharges, and so affect the atmosphere as to impair the principle of vegetable and animal life. One thing is very certain, that the *pestilential principle*, whatever it is, and from whatever source it arises, does, at certain times, pervade, not only the air, but the water also. The proofs of this are abundantly numerous and convincing. In all the great plagues which have afflicted the human race, other animals, as horses, cattle, sheep; sometimes cats, dogs and fowls, together with fish in the rivers and the ocean, and even vegetables, have borne their share in the calamity. Thus, preceding the great plague of 1665, in which year London lost 96,000 inhabitants, there was experienced, in 1664, great mortality among cattle: and in this year appeared a comet; another in 1665; and a third in 1666. In 1664 began an

eruption in *Ætna*, which lasted, with various degrees of violence, till 1669, when it ended with a terrible explosion. The winter of 1664-5 was terribly severe in England. The Thames was a bridge of ice; and in January happened earthquakes in Coventry and Buckinghamshire. These facts will suffice to show the concurrent effects in the natural and animal world, during this pestilential period. Corresponding phenomena can generally be traced about the time of all other great pestilential scourges.

The present prevailing epidemic cholera has been attended, through all its destructive course, by the same accompaniments. In Hindostan, in 1817, numbers of cattle are said to have died. At Calcutta, in 1827, numbers of dogs were attacked and died in the streets. Mr. Chalmers says, that in the towns in India near the hills, where cholera was so fatal, a disease occurred among the cattle which kept pace with, and often exceeded in mortality, that of the human species. Dr. Rankin states, that goats and camels were affected and died during the prevalence of the cholera at Rajputana; and when it prevailed at Moscow, Dr. Jähnichen says, poultry, chickens, turkeys, &c. were affected. It is said in Prussia that multitudes of fish died during the prevalence of the epidemic. In this country, an unprecedented mortality has been experienced among sheep and other animals. Fowls, such as swallows, doves, &c. have died, as we have been informed, in numbers, at Montreal, Plattsburgh, &c. The seasons, too, for some time past, have been remarkable for their distemperature, uncommon and severe—sudden high winds, and unprecedented inundations. It appears from Dr. Jameson's Bengal Reports, that for some years before the epidemic cholera made its appearance in 1817, there had been excessive heavy rains, great droughts, storms, and earthquakes. Mr. Scott, in his Madras Reports, also speaks of the marked intemperature of the seasons preceding and accompanying the appearance of the disease.

In fine, these concurrent events plainly appear to indicate one general and common cause. The known fact, that the conjunction of planets, or the approach of a comet, varies or diminishes the density, and consequently the pressure of the circumambient air upon the surface of the earth, thereby causing an augmented rise of tides and winds, and also a more ready escape of any subtle and unwholesome or pestilential effluvia from the interior of the earth, seems, indeed, irresistibly to force upon us the conclusion that epidemics have a terrestrial origin, and that the approach of comets to the earth is a great link in the chain of their causation.

* But let some prophet or some sacred sage
Explore the cause of great Apollo's rage.*

August, 1832.

EXPERIMENTS WITH NARCOTINE.

(Concluded from page 44.)

Experiments for the purpose of determining the Operation of Narcotine upon the Human System, in a State of Health. By WILLIAM TULLY, M.D. Professor of Materia Medica and Therapeutics in the Medical Institution of Yale College.

Communicated for the Boston Medical and Surgical Journal.

Exp. VI.—K. T. W., of ordinary susceptibility to the impression of medicine—pulse at seventy-two, its natural standard—took, at half past nine o'clock, A. M. (Tuesday, March 8th, 1831), half a grain of Narcotine, diffused in a little water.

At half past ten, pulse sixty-four, and neither increased nor diminished in force or fulness—no sensations different from ordinary.

At eleven o'clock, pulse sixty-four—a sensible and obvious diminution both in force and fulness, though not a great one—no variation in the sensations from their natural state.

At half past eleven, pulse fifty-six—evidently still softer and smaller—no new sensations. Now took another half grain of Narcotine.

At half past twelve, pulse fifty-six—as respects force and fulness, the same as at the last examination—no new sensations.

At one o'clock, P. M., ate an ordinary dinner, with an ordinary appetite.

At half past one, P. M., took another half grain of Narcotine.

At half past two, pulse fifty-six—no appreciable difference in force or fulness, when compared with the last examination—considerable hoarseness—no unusual sensations. Now took an additional half grain of Narcotine.

At half past three, pulse fifty-six—force and fulness about as at the last examination—hoarseness rather augmented—considerable somnolency, so that it is difficult to confine the attention to a book. Took another half grain of Narcotine. For the succeeding half hour there was so much somnolency as to have repeated naps in a chair.

At half past four, P. M., pulse fifty-six, and in other respects the same—the somnolency considerably relieved by late naps. Took another half grain of Narcotine. From half past four, P. M., to the beginning of the evening, there was no very considerable somnolency. Drank tea at dusk—then walked a quarter of a mile. Toward the latter part of this walk, suddenly seized with nausea and vomiting, which passed by as suddenly as they came on.

About half past eight, P. M., walked again, during which was again seized with nausea and vomiting, which again passed off with equal suddenness. Both paroxysms of vomiting remarkably easy, only the supper which had been recently taken being rejected, and without any bile, or anything having an ill taste. The vomiting was followed by singultus for a short time.

About half past nine, P. M., vomited again, the paroxysm coming on and disappearing in an equally sudden manner, producing no straining, and leaving no sensations indicative that it had taken place. During the

whole evening there was considerable somnolency; so much, indeed, that, independent of the walking, it would have been difficult to keep awake. Went to bed about ten o'clock, and finally could not get asleep for a considerable time. Ultimately, however, had a good night's rest, not awaking till morning. Was perfectly well the next day. Had no discharge from the intestines either upon the 8th or the 9th.

Exp. VII.—W. T., with his pulse at seventy-two (its natural standard), took, at half past nine o'clock, A. M. (Tuesday, March 8th, 1831), half a grain of Narcotine.

At half past ten, pulse sixty-four, neither increased nor diminished in strength or fulness—no sensations different from the natural.

At eleven o'clock, pulse still at sixty-four—perhaps a little smaller and softer, but no great change—no sensations different from the natural.

At half past eleven, pulse sixty-four—no difference in the other qualities from their condition when last examined, and no peculiar sensations. At this time took another half grain of Narcotine. Dined, as usual, about one o'clock, P. M. At half past one took another half grain of Narcotine.

At half past two, pulse sixty-four—in other respects, as when last examined—no sensations different from ordinary—change of voice, and considerable hoarseness. Took another half grain of Narcotine.

At half past three o'clock, P. M., pulse fifty-six—force and fulness the same as when last examined—have been engaged the last hour in hearing a recitation, which involved considerable discussion, occupying the mind intensely, and occasioning considerable speaking—hoarseness much increased. Now took another half grain of Narcotine. During the next hour, took a walk of half a mile, and attended to some business.

At half past four o'clock, P. M., immediately after the walk, pulse seventy-two—feel much languor and lassitude—hoarseness as when last mentioned. Took another half grain of Narcotine.

At six o'clock, P. M., had a mazy and somewhat vertiginous sensation in the head, but it was rather pleasant than otherwise—at the same time there was considerable somnolency. Throughout the whole evening, till nine o'clock, P. M., was uncommonly sleepy, so as to have considerable difficulty in keeping awake—from nine till midnight, was not at all sleepy—for the remainder of the night, slept as usual. N. B. Have had no discharge from the intestines, and no tendency to one, since the commencement of experiments with the Narcotine, on the morning of Monday, 7th, though am ordinarily more inclined to a lax than to costiveness.

The next experiment was instituted, for the purpose of determining whether a larger dose of Narcotine than was employed in the last detailed cases, given at regular and equal intervals, might not produce a stimulant effect upon the system.

Exp. VIII.—A. L. B. M., pulse at seventy-two, took, at half past nine, A. M. (Friday, March 11th, 1831), one grain of Narcotine, simply diffused in water; and at half past ten, took another grain in the same manner.

At half past eleven, pulse fifty-six—no change in sensations. Took another grain of Narcotine.

At half past twelve, pulse fifty-six—slight degree of mazziness of the head—calm, placid, and pleasurable sensations. Took another grain of Narcotine.

A little before one o'clock, walked a quarter of a mile—had the customary appetite for dinner, but ate moderately—considerable languor and lassitude afterwards—also some vertigo, and very slight nausea on motion or exertion.

At half past one, pulse fifty-six—took another grain of Narcotine—walked another quarter of a mile—sensations as when last described.

At half past two, pulse still fifty-six—somniaency considerable—sensations exactly like incipient intoxication.

At half past three, pulse fifty-six—the mazy feel of the head and the somniaency very considerably increased—some vertigo on motion—change of voice and hoarseness—incipient itching of the surface—difficulty of confining the attention to a book so as to understand it—some thickness of speech—slight staggering on attempting to walk—but, on the whole, sensations quite pleasant. Now took another grain of Narcotine.

At half past four, pulse fifty—somniaency considerably increased—itching much greater than when last mentioned—slight vertigo—pupils of the eyes considerably contracted—affection of the voice, and staggering, about as when last described—pleasurable sensations also about the same. Took another grain of the Narcotine.

Between half past four and half past five, slept in a chair the greater part of the time—voice still more changed, and still greater hoarseness—thickness and slowness of speech somewhat increased—although so sleepy, yet easily aroused—when awake, a little vertigo.

At half past five, pulse fifty-six. Took another grain of the Narcotine.

About six o'clock, took a light supper, and drank two cups of tea.

At half past six, pulse fifty-six—general symptoms heightened. From this time till half past seven, a gradual increase of the mazziness of the head, and of the vertigo, and also of the somniaency. At half past seven, took another grain of Narcotine.

From this time till nine o'clock, P. M., a great increase of the somniaency—almost uninterrupted sleep in a chair—sleep extremely quiet and easy, and aroused out of it with great facility—singular, but not disagreeable feelings in the epigastrium—considerable itching of the surface—great torpor of the bladder, so as to be entirely unable to empty it—in all probability (judging from circumstances) a considerable deficiency in the secretion—pulse fifty-two in a minute—no nausea—when awake, sensations pleasurable even in a high degree.

At nine o'clock, P. M., went to lodgings—during the walk, an alleviation of the symptoms, but, on being at rest for a short time, they were increased again, even beyond what they were previous to the walk—itching again returned—now had exquisitely pleasurable sensations—smoked a cigar, which rather enhanced them—great thickness of speech, and even difficulty of talking intelligibly—could not succeed at all in voiding any urine, and at last went to bed without. Had a quiet night's

sleep, and awoke the next morning with a slight headache, which disappeared entirely after breakfast—otherwise perfectly well, with the exception only of the deficient secretion of urine and the torpor of the bladder, both of which still continue—at last, after nineteen hours' suppression or retention, succeeded in voiding a moderate quantity of urine, perfectly natural in appearance.

During the forenoon of Saturday, March 12th, was rather sleepy—could not see very distinctly to read, as there was a sensation of a blur before the eyes—had difficulty also in confining the attention to a book.

The next experiment was intended to determine the difference between the effects of Narcotine dissolved in Hydric or Sulphuric *Æther*, and Narcotine simply diffused in water; but, on account of the offensiveness of the *Æther* to the subject of the experiment, the first plan was abandoned, and it was pursued with the object of the last experiment. Dr. P.'s great susceptibility prevented its pursuit beyond three doses of the Narcotine.

Exp. IX.—W. T. P., as has been stated, of more than ordinary susceptibility to the impression of medicine, with his pulse at eighty, its ordinary standard, took, at ten o'clock, A. M. (Friday, March 11th, 1831), one grain of Narcotine, in a fluidrachm of Hydric or Sulphuric *Æther*, and diluted with half a fluidounce of water. The *Æther* being extremely offensive, and causing frequent eructations, nausea took place in about half an hour.

At half past ten o'clock, A. M., took another grain of Narcotine, simply diffused in water.

At half past eleven, pulse sixty-four, evidently softer and smaller. No change in sensations, except the disgusting and disagreeable effect of the *Æther*, which still continues.

At half past twelve, pulse fifty-two, languor and lassitude—mazy feel of the head—so much somnolency as to fall easily asleep in a chair, but still, with sufficient effort, able to keep awake, and even to confine the attention to a book. Sensations quite pleasant. Now took another grain of Narcotine diffused in water.

At one o'clock, P. M., a slight degree of exhilaration, and still more pleasurable sensations—dined with a good appetite. About fifteen minutes after dinner, vertigo and nausea commenced, by which was compelled to lie down. While on the bed, there was a perfect cessation of both these symptoms, and the sensations were again pleasurable. Dozed a little, but did not sleep sound—very sensitive and irritable, and easily disturbed by talking, the noise of children, hammering, etc., which caused starting, and sensations somewhat resembling a very slight galvanic shock. There was now considerable itching of the skin.

At two o'clock, P. M., the pulse was fifty-two, and there was much hoarseness.

At half past two got up, but was obliged to return again to bed on account of the vertigo and nausea, which exertion and motion immediately produced. When quiet, and in a horizontal posture, these symptoms immediately disappeared, and sensations were again pleasant.

From three o'clock till four, P. M., there was much somnolency, and even actual sleep, most of the time.

At four o'clock, pulse still fifty-two. Now began to be troubled with vertigo and nausea whilst lying on the bed. Between four and five o'clock, vomited three times, but very easily.

At six o'clock, P. M., pulse still fifty-two, but the effects of the Narcotine appeared to be gradually subsiding.

At half past six, attempted to pass urine—the bladder was extremely torpid, so that it flowed very slowly, and with great difficulty. Remained in bed till seven o'clock, P. M., at which time got up and attempted to drink a cup of tea, but failed. Remained extremely hoarse—quite languid, and with more or less vertigo and nausea, till eight o'clock in the evening, when went to bed and slept till six o'clock, A. M., of Saturday, 12th, awaking only once during this whole time, and that but for a moment or two.

The next two experiments were instituted for the purpose of determining whether the effects of Narcotine are augmented by union or conjunction with Olive Oil, as has been affirmed by some.

Exp. X.—A. L. B. M., with his pulse at seventy-two in a minute, took, at ten o'clock, A. M. (Friday, March 10th, 1831), three grains of Narcotine, rubbed into about two fluidrachms of Olive Oil, to which had been added a small drop of Oil of Cinnamon, just sufficient to give it flavor.

At eleven o'clock, pulse sixty-four—slight sensations of dulness, but nothing else.

At twelve o'clock, M., pulse fifty-six—a mazy feel of the head, but general sensations pleasant.

At one o'clock, P. M., pulse forty-eight—sensations much as at twelve. Between one and two o'clock, walked about a quarter of a mile to dinner—had a good appetite, but ate moderately, and returned.

About two o'clock, immediately after return from dinner, pulse seventy-two—voice somewhat changed—some hoarseness—and some exhilaration.

At four o'clock, pulse fifty-six—sensations as at two.

At five o'clock, pulse forty-eight—somewhat sleepy—general sensations agreeable. From this time, all the symptoms above described gradually subsided. Dr. M. does not think that these three grains of Narcotine, rubbed up with oil, produced half the effect that the six grains, taken in water, produced on Monday; but this may have been owing, in some measure, to diminished susceptibility from having taken the article for two or three days in succession. N. B. Dr. M. was costive when he first began the experiments with the Narcotine. On this account he took five grains of Calomel on Tuesday night, which purged him four or five times on Wednesday morning. From this time till the next Monday morning he did not have a discharge from the intestines. At the last-mentioned period, he had a spontaneous and perfectly natural one.

Exp. XI.—W. T. P., with his pulse at eighty in a minute, took, at a quarter past ten o'clock, A. M. (Thursday, March 10th, 1831), three grains of Narcotine, with two small drops of Oil of Cinnamon, the two well rubbed with a fluidrachm of Olive Oil.

At eleven o'clock, pulse seventy-two—a slight mazy feel in the head.

At twelve o'clock, M., pulse sixty—pleasurable sensations generally.

Between twelve and one o'clock, walked about a quarter of a mile ; after which, pulse sixty-four—sensation of dryness and clamminess in the mouth, though, to the eye, it appears sufficiently moist—considerable exhilaration—had a good appetite, and ate rather more than usual—after dinner, pulse seventy-two.

Between one and two o'clock there was a gradual increase of the exhilaration.

From two till three o'clock, was occupied in writing, to which could apply as well as usual.

At three, began to feel slight vertigo and nausea—walked about half a mile, during which had moderate hiccup for about ten minutes—vertigo and nausea abated during the walk.

At four o'clock, immediately after the walk, pulse seventy-two—still a sensation of dryness and clamminess of the mouth—bladder torpid, so as to render the discharge of urine slow and difficult—on sitting a short time, there was a return of the vertigo and nausea, but in no very considerable degree.

At five o'clock, pulse sixty-four—considerable languor and lassitude—vertigo and nausea on motion or exertion.

From this time till nine o'clock, P. M., had more or less vertigo and nausea the whole time, accompanied with three paroxysms of moderate hiccup, which lasted about ten minutes each time.

From nine till eleven o'clock, P. M., the above detailed symptoms gradually disappeared. Went to bed, had a good night's sleep, and felt perfectly well the next morning.

The next experiment was instituted for the purpose of determining whether the effects of Narcotine are as greatly diminished by solution in dilute Acetic Acid, as has been represented.

EXP. XII.—W. T. took (Friday, March 11th, 1831), at half past nine o'clock, A. M., five grains of Narcotine, dissolved in dilute Acetic Acid ; his pulse, at the time, being seventy-two beats in a minute.

At half past eleven the pulse was at fifty-six, without any change either in force or fulness—there was a slight mazy feel of the head—some change of the voice, and hoarseness.

At half past twelve the pulse remained at fifty-six—there was a still greater change in the voice, and considerably more mazziness of the head ; but the sensations were, nevertheless, quite agreeable.

At half past one o'clock, P. M., the pulse still remained at fifty-six—there was extremely slow, difficult, and protracted evacuation of the bladder—the general symptoms and sensations, in other respects, as at twelve o'clock.

From half past one o'clock till about nine o'clock, P. M., there was a gradual increase of the mazy and confused feel of the head—more or less itching of the surface—the occurrence of considerable somnolency—hoarseness and peculiarity in the sound of the voice—the whole attended with general pleasurable sensations.

At nine o'clock, P. M., there was great difficulty in emptying the bladder.

From nine o'clock till eleven, P. M., there was a gradual diminution of all the symptoms. At the last-mentioned time, went to bed, and slept

quietly till morning, when awoke perfectly well, and entirely in a natural state.

Since the foregoing experiments were made, Narcotine has been employed in medicine by a considerable number of the practitioners of Connecticut; and, I believe, in every instance—at least in every one that has come to my knowledge—with a full conviction of its value as a medicinal agent. Some observations in regard to its various therapeutic applications, may constitute the subject of a future essay for the Boston Medical and Surgical Journal.

New-Haven, Ct. August 1, 1832.

THE foregoing Experiments, from so accurate and philosophical an observer as Dr. T., cannot fail to interest the medical profession. We regret that so important an error in typography, as that corrected last week, has occurred in their publication. For a notice of this error we are indebted to Dr. T., from whose note on the subject we insert the following extract, since it contains some further remarks pertinent to the subject.—*Ed.*

The subject of this sentence is one to which my attention has been turned particularly, for many years; and I think I am prepared to show, as certainly as the negative of such a question can be shown, that the number of narcotics, which possess any true stimulant powers, is, in reality, very small; and that, in the few instances in which these two powers are associated in one article, they are just as distinct powers as narcotic and cathartic powers are, and not parts of one and the same power, as it has been the fashion to suppose, since the time of John Brown. As respects the narcotics treated of—in Murray's *Materia Medica*, for example—not more than five, at the farthest, of the articles which he enumerates, are in any degree stimulant. Alcohol possesses this power very decidedly and prominently. Opium certainly has it in a less degree; and perhaps Lactucarium, but of this I am not absolutely sure. Camphor, too, possesses it, in all probability, in a less degree than Opium. Perhaps Aconite is a stimulant, and perhaps not. My observations upon this article are not sufficiently extensive to enable me to speak with certainty. Hyoscyamus, Belladonna, Conium, Digitalis, Tabacum, Stramonium, and Lauro-Cerasus, are certainly entirely destitute of any true stimulant powers, in any degree whatever. With the Rhododendron Chrysanthum, I am not experimentally or practically acquainted; but, if the published accounts of its operation may be trusted, this also is destitute of stimulant powers. The Nux-Vomica does not appear to be stimulant at all, though it is probably more or less tonic, in addition to its narcotic powers. The Arnica does not appear, to me, to be at all narcotic, and I am certain that the Toxicodendron is not. The Lupulus is also entirely destitute of all narcotic power. This article has been a subject of repeated experiment with me, and I have likewise had much experience of its use. It is a mere nervine bitter tonic. Sulphuric Ether is neither narcotic nor stimulant. It will be observed, that I use the term stimulant in a definite and precise sense. In order to be entitled to the denomination of stimulant, I consider that

an article must be capable of producing 'a quickly diffused and transient increase of the vital energies generally, and a similar increase of the strength of arterial action.' Murray, and indeed most medical writers, appear to use this term in at least half a dozen different senses, some of them so vague and general as not only to include the whole *Materia Medica*, but even many articles not known to possess remedial virtues. This, it will be obvious, is even more comprehensive than the term medicine.

W. T.

MALIGNANT CHOLERA.

To the Editor of the Boston Medical and Surgical Journal.

Middletown, Conn., August 20, 1832.

SIR,—It has been frequently asserted, that the general method of treating sinking typhus, when applied to cholera, has disappointed expectation. This assertion, however, it is believed, has usually been made by those who have had but very limited, if any, experience in the lowest typhoid diseases that have prevailed in various parts of our country, during the present century. It is never to be supposed that patients, who are actually moribund when first seen by the physician, are to be resuscitated; but it is perfectly evident, that by an energetic, persevering course, many of the cases, usually supposed to be desperate, are curable. A considerable number of cases of cholera, in subjects directly from New York, or among persons who have associated with them, have occurred in the vicinity of New London. I lately sent you the statement of one, and am now able to add another, treated successfully upon the principles of sinking typhus, in which opium was employed to its fullest extent. It had the most salutary influence; and with its adjuvants, it appears to have been the only means that was possible to restore the patient.

As my correspondent did not write for the public eye, I have taken the liberty to change the phraseology in a few instances, but without varying his meaning, as I conceive, in the slightest degree. Dates, symptoms, numbers, medicines, quantity, frequency, &c. have been literally preserved. Yours, very respectfully, THOMAS MINER.

Extract of a Letter from New London, dated August 15, 1832.

On the evening of the 9th inst., at eight o'clock, I was called in consultation by Dr. M. to see a Mrs. S., aged 21, who had been at her aunt's, Mrs. H., during part of the illness of her family, which had suffered severely from the cholera since they left New York. On the 28th of July, she left them with a diarrhoea and debility. This state continued till the morning of the 9th inst., when, at ten o'clock, she took, without advice, about five grains of calomel. At four, P. M., she began to puke, and have violent spasms or cramps in the legs. Dr. M. arrived at five, and found her cool and sinking. On my arrival she was warm, but dry; pulse one hundred and very feeble; tongue furred, and she could not speak. On asking where the distress was, she placed her hand over the stomach, and on the lower limbs. The spasms were more violent than any I ever saw, even in tetanus, and they came on as regularly as labor pains. The toes would be drawn towards the heels, the heels

against the nates, and the knees up under the chin, when she would scream out, and a light watery fluid would be ejected with force from the rectum among the bed-clothes. I was apprehensive she would die from the violence of the cramps. Dr. M. had given ten grains of opium, and put plenty of blankets over, and hot bricks around her. We then gave a pill of five grains of opium and three of calomel, and followed it instantly with a tablespoonful and a half of laudanum, in half a glass of hot brandy toddy, which was at hand. After waiting half an hour, another spasm was followed by three grains of opium. She then became more easy, and at nine o'clock a warm moisture began to show itself, which we considered as very favorable—and I left her. The next morning, Dr. M. told me, he gave half a tablespoonful of laudanum, an hour after I left, and that at eleven o'clock the cramps and discharge from the bowels were silenced. She took, however, during the night, three pills of one grain of opium and half a grain of calomel each, and drank wine and water, which she preferred to brandy. Her skin was warm and moist, with a pulse of 120, of good force. She puked thrice during the night, but not hard or much. Her speech returned, and she said she understood everything that had been done. She now begged for cold water. She also complained of general soreness and debility, and slept but one hour during the night. During the 10th, she slept four hours. On the 11th, she passed a little water, for the first time since her illness [sufficient to induce her to call for medical assistance]. She took no medicine after the 12th, when we ordered her a light meat broth. She is now quite well.

BOSTON MEDICAL AND SURGICAL JOURNAL.

BOSTON, SEPTEMBER 5, 1832.

STATISTICAL ACCOUNT OF CHOLERA IN AMERICA.

St. Johnsbury, Vt., August 22, 1832.

MESSRS. CLAPP & HULL,—Have you not the means of giving a statistical account of the progress of cholera in America, from its commencement in Quebec down to the present time? I wish, if possible, to trace its rise, progress, and decline in our country. This, to be done, must be soon commenced, in order to have correct data. The exact number of deaths, perhaps, may not be attainable in all places; yet I think they may be nearly so. I may be asking too much of you, or that which is not possible for you to perform: still, if you have not the means on hand from which the facts can be obtained, I must believe that through the medium of your subscribers and correspondents all necessary information would be cheerfully given. This scourge of the old world must not pass through our land, without its pathology being better understood than in Europe or Asia. It has not proved more fatal, as yet, in any part of our country, than did typhus syncopalis, spotted fever, even in this region, when it commenced. Yet, before that disease had prevailed here thirty

days, such confidence had we in our plan of treatment, that if we could see our patients in season (except very small children), we were as sure of their recovery as in ordinary typhus.

Our general plan of treatment was the same as that spoken of in the Journal; and I do know that cases where the state of collapse was as absolute as any case of cholera can be while life remains, were successfully treated—not in a solitary instance, but in multitudes of cases. The coldness of death, pulselessness, deafness, blindness, total inability to swallow for hours, want of susceptibility in the skin to boiling water—all were overcome by perseverance, and life saved.

Yours, most respectfully, CALVIN JEWETT.

The foregoing extract from a business letter, not designed for publication, is offered by way of introducing a request to our subscribers, wherever the cholera is, has been, or may be, on this continent, that they will send us an accurate statistical account of the disease as it may have fallen under their observation or knowledge—such an account as will enable us to form the table spoken of by Dr. Jewett. Such a plan we have had in contemplation; and each one who furnishes us the means of forming a single item in the general view, will be rewarded by possessing the whole in a compact and satisfactory form. In Quebec, Montreal, Albany, New York, Philadelphia, and many other places, we have, among our readers, able and eminent practitioners, who could execute the design perfectly, and, they will allow us to add, the better the sooner it is begun.

Respecting recoveries from spotted fever, when the patients were in a state of collapse, we fear there is some little misunderstanding respecting the exact state expressed by the term *collapse*. Most physicians have witnessed what has been always termed collapse, preceding death by many diseases; but when these same physicians first witness a *cholera* patient in this state, they generally, if not universally, agree that they had never before known the full signification of the term. When gliding into this state, the cholera patient may, perhaps, be sometimes brought back by the resources of the healing art; but when fully formed, a mightier arm than that of man, we apprehend, would be required to arrest permanently the fatal progress of the case.

CHOLERA IN BOSTON.

THE history of cholera in this city seems to be destined to add to the number of wonders in regard to this strange malady, and to increase the difficulty of coming to any conclusion as to the laws of its appearance and progress. It is, in very truth, a most strange phenomenon—an invisible comet—a potent, relentless and capricious enemy, striking blows in the dark, and mocking at our efforts to evade its force or deprecate its fury. The anticipation of it seemed to haunt the public mind like a nightmare, producing a sense of something terrible near us, which the external face of nature flatly contradicted; and even now that we have seen the monster, the impression has almost the vague, unreal character of a dream, so much was its aspect at variance with all else which presented itself to our sober senses. Let us consider the facts. The average mortality of the city of Boston is estimated at 28 weekly deaths. During the week ending August 18th, the number was 21; during that which followed, 28; and the last week, which ended September 1st, 17; making a total

of 66, which, compared with 84, the average for the three weeks, shows how much more healthy than usual our city has been during this period. Yet, within this same period, four individuals have died with cholera, marked by all the symptoms which characterize the eastern disease, and which have accompanied it to our sister cities on this side the Atlantic; having the same rapid course and termination, exhibiting the same peculiar evacuations, the spasms, the collapse and asphyxia, all strongly and distinctly marked, so as not to be mistaken by the most careless observer. All these cases, it is to be observed, terminated fatally. We have heard of no case of spasmodic cholera which had a different event. In the mean time, it is certain, both from the general report we have already referred to, and from the classification of the deaths, that the usual bowel complaints of the season are comparatively rare, or, if as numerous as usual, far less grave and fatal. Of the 66 deaths, already mentioned as constituting the mortality for three weeks, three only are of dysentery, and one of bilious cholera. We shall again recur to the subject of this last case. In the mean time, it may not be uninteresting to remark, that the number of deaths for the three weeks ending Sept. 1, 1831, was 88, of which five were of cholera, and twelve of dysentery; making the whole mortality then greater, by one third, than that presented by the corresponding period this year, and the deaths from common cholera numerically greater than those from the two forms of the disease now existing. In the mean time our summer has passed away, and with it has ceased the only known atmospheric cause of our bilious cholera. More than two weeks have elapsed without the occurrence of a hot day. Our evenings begin to inspire something of an autumnal chill, and we begin already to talk of warm firesides and thick garments.

It is not in such weather as this that we are acquainted with severe cholera in ordinary seasons; and it is difficult to realize that we are menaced with it now. One thing is certain, that if under existing circumstances severe and fatal cholera should become epidemic among us, there will be little difficulty in recognizing it as a new disease; and instead of laying particular cases to the account of green apples, cucumbers, and watermelons, we must then be content to confess our ignorance of the cause of this mysterious malady, and wait for farther experience to enlighten our understandings.

The case of cholera which has been alluded to, deserves mention in this connection, since some of its symptoms allied it very nearly to those which have been reported as spasmodic cholera. The leading particulars of this case will appear from the following note, which we have received from one of the attending physicians.

MR. EDITOR,—On Tuesday, at noon, I was requested by my friend, Dr. M. G., to visit a patient in Wharf Street, to whom he had been called the evening previous, and whom he had found affected with severe cholera. The matters then vomited and purged were bilious. He had ordered sinapisms to feet, and pills of calomel and opium. On repeating his visit in the morning, he found that the pills had never been given. Vomited matter still tinged with bile. A blister was applied to the abdomen. On visiting her together, we found her in a sitting posture on her bed, which lay on the floor, and, like her clothes and person, was excessively filthy. She was throwing up, with very little apparent effort, a fluid resembling rice water, or serum holding suspended whitish mucous flocculi. The countenance was anxious; the eyes surrounded with a livid areola; the tongue of natural temperature, covered with a black coat; vomiting frequent; dejections frequent, not very copious, described as being like the matters thrown up. Had great thirst, which she had been satisfying with whey. The sound of the voice was natural; the respiration not hurried; pulse rapid and feeble. Hearing appeared to be impaired; the mind was clear, but anxious. The muscular strength was

considerable; she thought herself able to walk across the room. No distinct spasms were present; the toes were more than half flexed; fingers about half, but both under her control. The skin of the extremities was cold to the touch, rather moist; color nearly natural, perhaps sublivid; that of hands somewhat sodden and shriveled in appearance. Bladder had acted as well as usual.

At three, P. M., I visited her again. The vomiting and purging had ceased. The skin remained cold; the countenance was sunken; the voice hoarse, breaking into a harsh, squeaking tone. No pain or spasms.

At eight, P. M., the surface of extremities cold throughout. Face of natural temperature; tongue likewise; mind was much discouraged; pulse nearly insensible at wrists.

She sunk gradually, and died at midnight. The details of the treatment I do not give, as they were under the direction of Dr. G. Permission could not be obtained to examine the body.

This case was certainly not one of *spasmodic* cholera; but the character of the evacuations, the aspect of the countenance, and the change in the voice, together with the fatal issue, may impart to it some interest at the present time, and I therefore take the liberty to submit it to your attention.

Respectfully,

E. G. D.

CASES OF CHOLERA IN BOSTON, WITH APPEARANCES ON DISSECTION.

THE following was the first case of malignant cholera which occurred in this city. Some account of the second has been given in our last number; the third is given below; and the fourth will be published in our next.

Miss E. L., aged 30, was seized late in the evening of August 14th with colic, followed by purging and vomiting; was seen by a physician early the following morning, and found to have decisive symptoms of malignant cholera. She died at eleven, A. M. The examination was made by Drs. Warren, Bigelow, Ware, and Osgood. The post-mortem appearances were as follows:—

The body being viewed externally, presented a dark color of the skin, and the appearance of being shriveled. A blue circle surrounded the eyes. The flexor muscles of the arms were strongly contracted. No movements were noticed in these muscles.

The cavities of the thorax and abdomen being opened, the former presented the following appearances. The pleura, dark colored; lungs filled with dark colored blood. Heart very dark colored; its cavities containing a small quantity of thick blood, of about the same color on both sides.

Cavity of the Abdomen—Peritoneum darker than usual, and, together with all the surfaces exposed to view, showing a tendency to become dry as soon as exposed to the air. Muscles covered by the peritoneum of a very dark color, like that of a person who had died by strangling. Vessels of omentum injected with blood, and exhibiting many small veins quite distended with black blood. Peritoneal vessels of the stomach and intestines generally injected with blood more than usual. Liver of a natural aspect. Gall bladder moderately distended with dark green bile—none of which was seen in the cavity of the intestines. Spleen natural. Kidneys firmer than usual. Bladder contracted firmly, and empty. Uterus healthy. Semi-lunar ganglion unchanged in its appearance. On opening into the cavity of the stomach, a quantity of fluid was discovered, like water, half opaque, with flocculent substances floating in it; the quantity over half a pint. Near the pyloric orifice was discovered one whortleberry, surrounded by some dark mucus. This was the only remains of food or fecal matter in the whole tract of stomach and intestines. The mucous coat of the stomach was generally natural, and only slightly reddened near the pylorus. The small intestines contained a very large quantity of fluid, like thin water-gruel. The mucous coat of the duodenum had some degree of redness, and that of the small intestines, generally, was reddened by injection of the vessels of the mucous coat. The contents of the large intestines were thin, watery, and in great quantity. The fluid differed from that in the small intestines, in having a red color, similar to that which was perceived in the evacuations of persons attacked with cholera morbus in the State Prison. It had precisely the appearance of the washings of a piece of raw beef.

The aorta and vena cava contained each about the same amount of blood—that in the artery having the color of venous blood; and that in the vein the color of pitch.

G. S., aged 10. His parents reside in a pleasant, airy, comfortable house, and are in good circumstances. General health good. Some headache the last week previous to attack; otherwise as usual. August 24th, seized at two, A. M., and died at half past eleven. Vomited and purged copiously at first; found in collapse at half past six; no spasms after that time. Some temporary reaction from treatment.

Fifteen minutes after death, body generally flaccid; abdomen tense, not full; friction of external surface was found to produce a quivering action of the muscles, while forcible extension would cause permanent flexion. The tremulous motion was particularly noticed in fibrils of pectoral muscle, the spastic action in arms and legs. Palms of hands decidedly blue, skin elsewhere sublivid; hands cold, head cool, trunk warm, eyes fully open. Both corneas exhibited ulceration; that of right was found near the centre, to the extent of a line and a half in diameter, ragged. These ulcerations were stated to have commenced just before death. One, P. M., hands more livid than an hour since. Two, P. M., contraction may still be produced in the muscles by strong pressure or a blow, rendered evident in the deltoid and other thick muscles by a roundish tumor at the point affected.

Examination at one, P. M. *Abdomen.* External appearance of intestines purplish, everywhere injected with dark blood. Large intestine contracted for two or three inches where it enters the true pelvis. Stomach contained 3 ij. of thin reddish fluid, with a faint smell of brandy. The small intestines contained from 3 viij. to 3 x., the large intestines about 3 ij.; that in jejunum opaque, reddish white, nearly purulent in appearance. Lower down, fluid more clear, watery, with flocculent sediment. In the cæcum, *rice water* in considerable quantity, the flocculi resembling rice long boiled, or fragments of inspissated mucus. Some of the same fluid was found in rest of large intestine. Mucous membrane of stomach appeared like coagulated albumen, rather firmer than natural, retracting slightly when divided, generally of ash color, with very little redness, and no appearance of inflammation. That of the upper part of small intestines was very much corrugated, and blanched as if macerated, and more or less so throughout. The mucous membrane of large intestines was studded thickly with glands in cæcum and ascending colon, becoming less numerous beyond. Gall bladder of usual size, two thirds filled with dark bile, which by pressure was easily forced through the ducts into the duodenum. Kidneys not congested, contained no creamy fluid. Bladder much contracted, capable of containing a walnut; contained about ʒiiss. urine, no creamy fluid. *Thorax.* Lungs not congested; heart natural. Both sides contained some dark liquid blood, and some soft coagula. Bloodvessels were not distended; more blood in descending cava than in aorta; thoracic and abdominal aorta contained some dark thick blood, and some soft coagula; the lower cava was distended with dark fluid blood, and when abdomen was opened, a large quantity escaped from the veins at the groins.

✂ We regret the necessity of deferring Dr. Paine's Letter till our next.

Whole number of deaths in Boston for the week ending Sept. 1, 17. Males, 8—Females, 9—Still-born, 1.

Of dropsy in the chest, 1—typhus fever, 3—convulsions, 1—dyspepsia, 1—paralytic, 1—marasmus, 1—infantile, 1—cholera morbus, 1—syphilis, 1—dysentery, 2—malignant cholera, 1—lung fever, 1—consumption, 2.

ADVERTISEMENTS.

BERKSHIRE MEDICAL INSTITUTION.

THE Annual Course of Lectures will commence on the first Thursday in September, and continue fourteen weeks.

Anatomy, Surgery, and Physiology, W. PARKER, M.D.
Theory and Practice of Medicine, and Obstetrics, H. H. CHILDS, M.D.
Materia Medica, and Medical Jurisprudence, E. BARTLETT, M.D.
Botany, Chemistry, and Natural Philosophy, C. DEWEY, M.D.
Demonstrator of Anatomy, J. M. HUBBARD, A.M.

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Pittsfield, Mass. August 13th, 1832. By order of the Trustees, S. M. McKAY, Secretary.

NOTE.—The following authors are recommended to be used by the Students during the Lecture Term. On *Anatomy*, C. Bell, Horner, and Cloquet.—*Surgery*, S. Cooper, and W. Gibson.—*Practice and Theory*, Gregory, Good, Eberle, and Dewees.—*Obstetrics*, J. Burns, Dewees, and London Practice.—*Materia Medica and Medical Jurisprudence*, Beck, Chapman, and Eberle.—*Chemistry*, Bronde, Ferrier, and Webster.

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August 22, 1832.

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